Air Quality Summary—May 2012

Baton Rouge Area

OZONE

There were three (3) days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of May, 2012. Please see the table below for more detailed information on statewide ozone readings and the graph on page two for daily air quality index levels in the Baton Rouge area during May.

Air Quality Action Days (ozone): May 16, May 22, May 23, and May 28

$PM_{2.5}$

There were no violations of the NAAQS for $PM_{2.5}$ in the Baton Rouge area during the month of May, 2012. Please see the chart and table on the next page for detailed information on $PM_{2.5}$ levels throughout the state.

Other Areas of the State

OZONE

There were four (4) days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in areas of the state other than Baton Rouge during the month of May, 2012. Please see the table below for more detailed information on air quality levels during the month of May.

Air Quality Action Days (ozone): Shreveport—May 16 and New Orleans—May 23.

$PM_{2.5}$

There were no violations of the NAAQS for $PM_{2.5}$ during the month of May, 2012. Please see the chart and table on the next page for detailed information on $PM_{2.5}$ levels throughout the state.

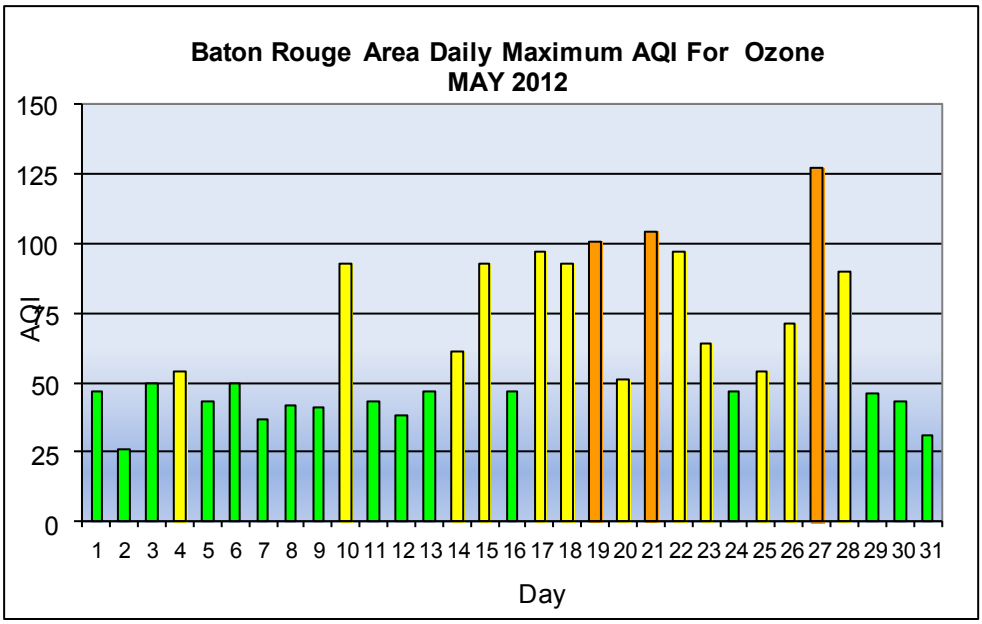
Statewide 8-HR Ozone Readings
Above 75 ppb - May 2012

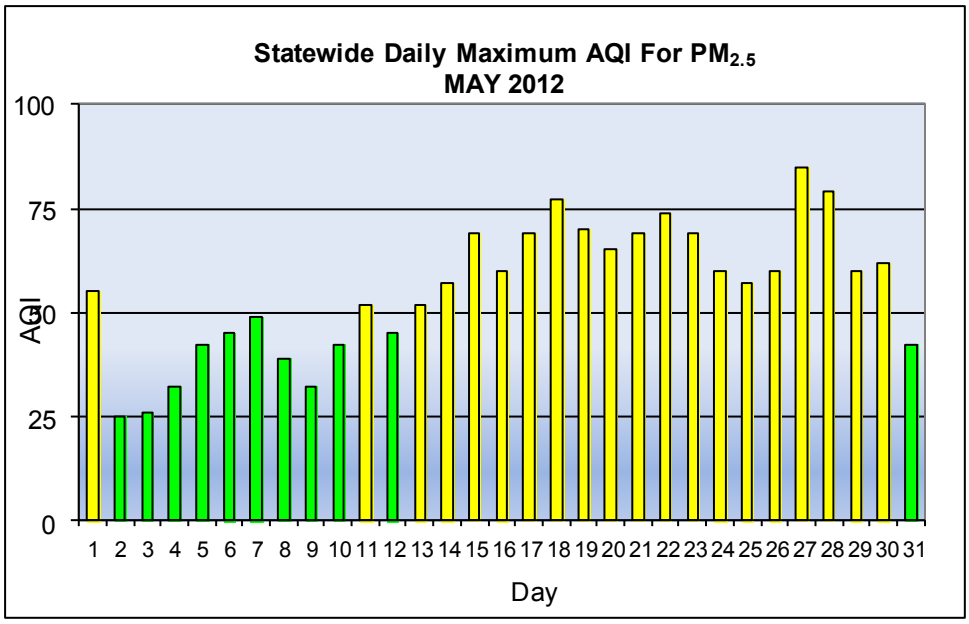
DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
5/10/2012	106	78	Garyville
5/18/2012	101	76	Garyville
5/19/2012	101	76	Bayou Plaquemine
5/21/2012	106	78	Thibodaux
	104	77	Dutchtown

DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
5/21/2012 (cont'd)	104	77	Dutchtown
527/2012	127	86	LSU
	101	76	Capitol
	101	76	Bayou Plaquemine
5/28/2012	109	79	Garyville

Air Quality Summary—May 2012

AQI AIR QUALITY INDEX | Good | Moderate | Unhealthy for Sensitive Groups | Unhealthy | Very Unhealthy | Hazardous





Statewide High PM2.5 24-Hour Average Readings - MAY 2012			
DAY	UG/m3	AQI	SITE
1	17	55	Port Allen
2	7.6	25	Shreveport Airport
3	7.9	26	Shreveport Airport
4	10	32	Chalmette Vista
5	13	42	Monroe
6	14	45	Monroe, Alexandria
7	15	49	Monroe
8	12	39	Monroe
9	9.8	32	Alexandria
10	13	42	Chalmette Vista, Monroe
11	16	52	Port Allen
12	14	45	Monroe
13	15.9	52	Alexandria
14	18	57	Lafayette
15	23	69	Chalmette Vista
16	19	60	Chalmette Vista, Monroe
17	23	69	Chalmette Vista
18	26	77	Chalmette Vista
19	23.2	70	Thibodaux
20	21	65	Monroe
21	23	69	Chalmette Vista
22	25	74	Chalmette Vista
23	23	69	Chalmette Vista
24	19	60	Chalmette Vista
25	18	57	Chalmette Vista
26	19	60	Chalmette Vista
27	29.5	85	French Settlement
28	27	79	Chalmette Vista
29	19	60	Monroe
30	20	62	Monroe
31	13	42	Monroe

Baton Rouge Climate Summary—May 2012

*Prepared by: Jay Grymes

(based on available preliminary data as of July 17, 2012)

May continued the 2012 monthly temperature trend: every month thus far has been warmer-than-normal for the greater Baton Rouge metro area. For Baton Rouge's Metro Airport (AP), May 2012's average monthly temperature was 77.4°F, 1.7° above the 30-year (1981-2010) monthly norm. While a departure of less than 2° may not seem significant, May 2012 ranks as the 9th warmest May (tied with 1915) since 1905!

In fact, January-through-May 2012 ranks as the warmest first five months of any year for Baton Rouge since at least 1930!

Daily maximum temperatures during May 2012 averaged 88°F (2° above average), also ranking in the top-ten for past Mays (since 1930). Daily highs reached 90° or more on 18 days during May 2012, including a 12-day run to close the month (May 20-31). Those 18 days rank as the second greatest number of 90° days during any May (since 1930), topped only by May 2010 with 21 days at 90° or above.

May minimum temperatures averaged 67°F (roughly 1° above the norm). Daily minimums were above 60° on all dates except May 10th, when the low dipped to 58°F. May mean-daily temperatures were above average for all but a 7-day stretch, May 9-15, when frontal passages and surges of cooler-and-drier continental air masses kept daily average temperatures slightly-below the norm.

May's notable warmth likely pushed energy demands for cooling and indoor comfort as much as 20% above average for businesses and residences.

Table 1: Average "daylight hours" sky conditions (to 12,000 ft) during May 2012, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	21	6	4

May 2012's 21 days of "fair to clear" skies during the day may not be a monthly record, but certainly is above average for the month, and contributed to May's warmer-than-normal (as well as drier-than-normal) pattern.

Sunrise-to-sunset periods for Baton Rouge during May -- excluding 'Civil Twilight' -- range from 13.4 hours (May 1) to 14.0 hours (May 31).

Baton Rouge Climate Summary—May 2012

*Prepared by: Jay Grymes

(based on available preliminary data as of July 17, 2012)

Table 2: May 2012 rainfall for selected sites across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, the LSU AgCenter, and the CoCoRaHS Volunteer Network.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days ≥ 0.01"	No. Days ≥ 1.00"
NWS Cooperative Network Sites				
BR – Metro Airport	***2.77"***	***-2.12"***	***5***	***1***
BR - Concord Estates	3.64"	-1.77"	7	1
BR - Sherwood Forest	4.67"	-0.69"	6	2
Clinton	2.72"	-2.74"	4	2
Denham Springs	5.00"	-0.31"	6	2
Dutchtown	8.00"	--	7	1
Gonzales	4.27"	-0.57"	8	1
Livingston	3.18"	-2.01"	6	1
New Roads	2.76"	-2.59"	6	2
Plaquemine	4.72"	-0.22"	6	2
Port Allen	3.60"	-1.41"	6	1
St. Francisville	4.25"	-0.81"	6	2
CoCoRaHS Volunteer Observers				
Shenandoah 2.1 W (LA-EB-18)	4.61"	--	6	2
Shenandoah 1.5 E (LA-EB-22)	3.87"	--	6	1
Shenandoah 0.8 W (LA-EB-36)	M	--	M	M
Monticello 3.0 ENE (LA-EB-19)	7.25"	--	6	3
Monticello 3.0 SSW (LA-EB-20)	M	--	M	M
Monticello 4.6 NNE (LA-EB-31)	5.40"	--	6	3
Baton Rouge 2.7 SW (LA-EB-2)	3.54"	--	5	1
Baton Rouge 3.5 E (LA-EB-14)	4.78"	--	6	2
Baton Rouge 2.5 E (LA-EB-27)	3.71"	--	7	1
Baton Rouge 4.3 S (LA-EB-41)	6.84"	--	7	1
Baton Rouge 1.4 WSW (LA-EB-46)	3.52"	--	7	1
Baton Rouge 5.3 S (LA-EB-47)	6.13"	--	5	1
Baton Rouge 2.1 S (LA-EB-48)	3.64"	--	7	1
Inniswold 2.8 S (LA-EB-42)	6.86"	--	8	2
Brownfields 5.8 NE (LA-EB-14)	M	--	M	M
Zachary 3.5 WNW (LA-EB-28)	2.40"	--	4	1
Gonzales 4.0 S (LA-AS-5)	2.88"	--	8	0
Gonzales 1.8 NE (LA-AS-9)	4.88"	--	9	1
Prairieville 1.8 NW (LA-AS-10)	5.32"	--	7	1
Port Vincent 4.4 W (LA-AS-2)	6.09"	--	4	1
Wakefield 0.9 WNW (LA-WF-4)	1.99"***(i)***	--	6***(e)***	1***(e)***
Additional Metro Area Sites				
LSU Campus (LA-EB-33)	4.00"	--	7	1
WAFB-TV, Downtown BR	3.43"	--	9	1
LSU AgCenter Ben Hur Farm	4.18"	--	9	1
LSU AgCenter St. Gabriel	4.06"	--	11	1

DFN - Departure-from-Normal , "--" - Normals Not Available , M - Missing Value

(e) - Estimated Value , ***(i)*** **-** Incomplete Total

Baton Rouge's Metro AP recorded just 2.77" of rain during May 2012, more than 2" below the May norm for that location. Table 2 shows that every regional NWS Cooperative site with a long-term normal also reported below-normal rainfall for the month. (It is noteworthy, however, that Dutchtown's 8.00" for May would have certainly been 'above average' if that site had monthly normals for comparison.) However, Metro AP displayed one of the larger departures-from-normal among the Cooperative sites: in fact, Metro AP's monthly total ranks as the fifth lowest across the entire greater metro area and is not reflective of a regional average.

Based on reports from the 33 sites in Table 2 (deemed to have a 'complete' monthly records), the metro area regional rainfall for May 2012 averaged 4.45", with a median of 4.18" (both values being substantially larger than the Metro AP's monthly accumulation). Given these regional numbers, it appears that May rains for the majority of the greater metro area were only slightly-below normal. In fact, Table 3 suggests that a half-dozen sites finished the month wetter-than-normal.

Table 3: Distribution of May 2012 rain totals based on sites in Table 2 with complete monthly records.

No. Stations ≤ 2.00"	No. Stations 2.01" - 3.00"	No. Stations 3.01" - 4.00"	No. Stations 4.01" - 5.00"	No. Stations 5.01" - 6.00"	No. Stations ≥ 6.00"
0	5	10	10	2	6

Most of May's rains fell during the first half of the month (as displayed in Fig. 1), with the month's two "wettest" days being either May 2nd and 7th for a majority of stations. May rainday counts ranged from as few as 4 days to as many as 11 days, with a median of 6 days (slightly below the regional long-term average of about 8 raindays). Of the 33 sites, 21 recorded totals of one-inch or more on just a single day, with only 2 of the sites reporting 3 days with rains of an inch or more.

May 2012 reports from the Metro AP ASOS weather platform included:
- 5 days with thunder (May 2, 6, 16, 21 & 23), compared to a Metro Airport average of 6-7 days;
- 21 days with fog, but no days with "dense" fog (visibility < 1/4-mile); and
- smoke and/or haze on 9 dates (May 1, 5, 6, 17, 18, 20, 22, 25 & 26).

Late winter and spring tend to be the windier times of the year for Baton Rouge, largely as a result of active frontal weather, but such has not been the case recently. Continuing a trend observed in April, winds recorded at Metro AP averaged a very modest 4.3 mph during May 2012 -- well below the 28-year average of 6.7 mph. Daily winds averaged below 10.0 mph on all but a single day: May 24th. Daily winds averaged less than 5.0 mph during 19 days in May, including all but two days between May 3-22. In fact, daily winds averaged under 3.0 mph on 8 days -- essentially "calm" conditions by spring standards. Daily peak wind gusts during May did manage to top 20 mph on 12 dates, including the monthly maximum of 30 mph recorded on May 7th.

Drought Status:
Following the improvement noted earlier in the year, May's warm and relatively dry weather -- especially during the latter half of the month -- led to a modest decline in the soil-moisture status for much of the Bayou State. However, based on local and regional expert assessments, conditions did not significantly decline across the Baton Rouge metro area. As a result, according to the weekly ***U.S. Drought Monitor*** (Fig. 3), the Baton Rouge metro remained "near normal" through the month of May and into early June.

Tropical Outlook:
The consensus among pre-season tropical outlooks for the 2012 Hurricane Season (Jun 1 - Nov 30) calls for a notably "quieter" season compared to the last couple of years in terms of storm numbers. Yet May 2012 will be remembered for its unusual tropical activity, with two 'named' storms -- *Alberto* and *Beryl*. Although the development of 'named' tropical systems during May has become almost commonplace in recent years, May 2012 is only the third time on the record books with two 'named' storms and the first such occurrence since 1908! (The only other occurrence was in 1887.)

Most tropical forecast groups, if not all, are still calling for a less active tropical season compared to 2010 and 2011), even with this unusually 'active' start. A key factor in terms of tropical activity in the Atlantic Basin is related to the state of ENSO (*El Niño* / Southern Oscillation). Historically, tropical activity over the Atlantic is decreased during periods when the Pacific's *El Niño* phase is present -- identified by warmer-than-normal sea-surface temperatures (SSTs) over the eastern equatorial Pacific. Although, SSTs over the Pacific's *El Niño* region during May remained near-normal ("neutral"), the region has displayed a modest warming trend and model projections continue to call for the establishment of *El Niño* by the late summer and early fall, the typical period of peak tropical activity for the Atlantic Basin.

Extended Outlook:
Summer season forecast skill for temperatures is not especially strong for the Gulf Coast region, and the skill is poor for seasonal rainfall. Given that, the extended range outlooks for temperatures suggest a fairly high likelihood for Baton Rouge area temperatures to run near-normal to above-normal through the summer -- residents should prepare for higher-than-normal energy use as a result of above-average cooling demands.

Figure 1: May 2012 *Daily Max/Min Temperatures and Precipitation* as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm (Nicholson Drive).

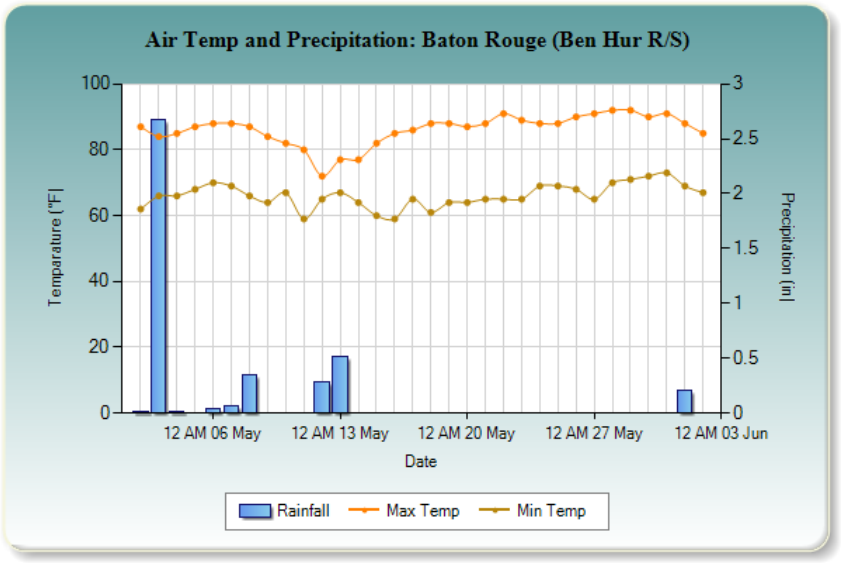


Figure 2: May 2012 *Daily Solar Radiation and Max/Min Daily Temperatures* as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm (Nicholson Drive).

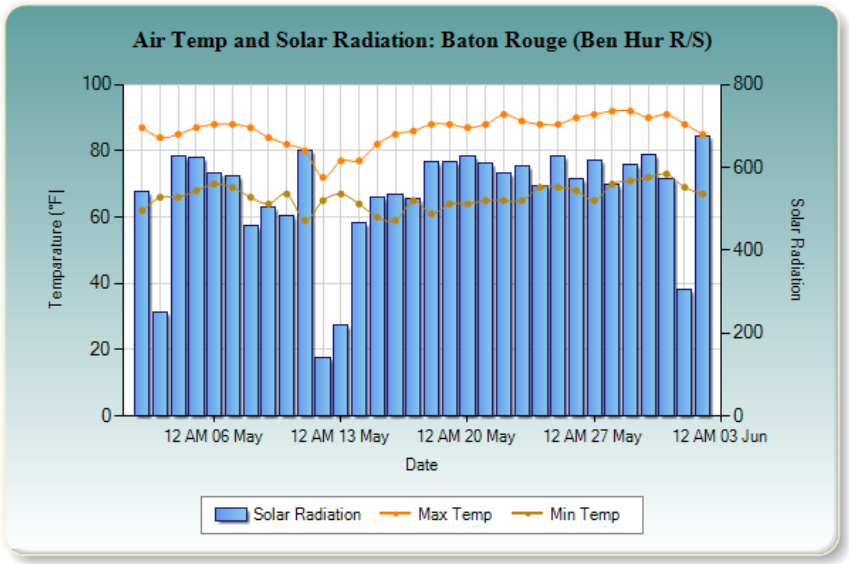
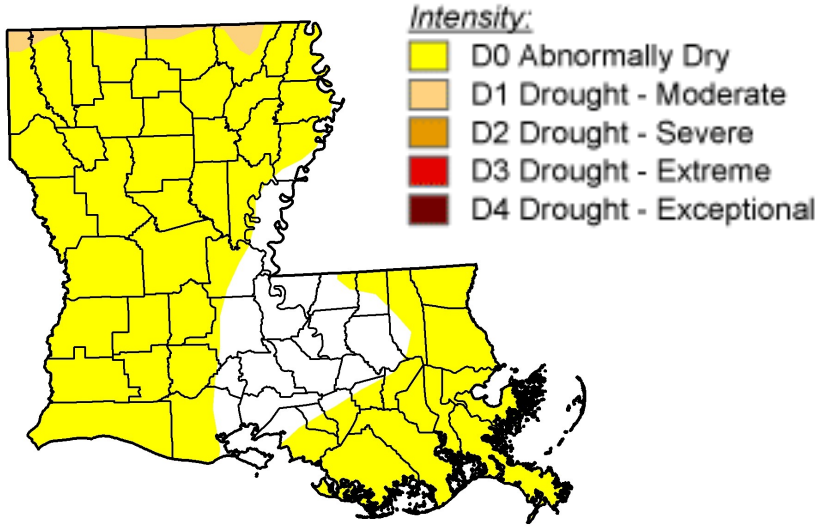


Figure 3: Weekly ***U.S. Drought Monitor*** depiction for 5 June 2012.
Source: http://drought.unl.edu/DM/



Acknowledgements:

- National Weather Service offices serving Louisiana
- LSU Southern Regional Climate Center (SRCC)
- Louisiana Office of State Climatology (LOSC)
- LSU AgCenter / LAIS Weather Monitoring Program
- CoCoRaHS Volunteer Network
- U.S. Drought Monitor (http://drought.unl.edu/DM/)
- NWS Climate Prediction Center (NWS/CPC)
- NWS Storm Prediction Center (NWS/SPC)
- NWS Hydrometeorological Prediction Center (NWS/HPC)
- NOAA/National Climatic Data Center (NCDC)
- WAFB-TV (Ch. 9), Baton Rouge

Prepared by:
Jay Grymes
WAFB-TV Chief Meteorologist & LSU AgCenter Climatologist *(Ret.)*
18 July 2012

*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.